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Minimal Invasive Spine Surgery Is Cost Effective Compared To Traditional Open Spine Surgery In Lumbar Fusion

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INTRODUCTION

- The reasoning for performing minimal invasive spine surgery (MISS) is the perception that a gentle surgery is in many cases more beneficial for the patient, than a traditional surgery would be.
- The benefits are understood to be a faster healing, less pain, and consequently a faster mobilization and rehabilitation. The lesser damaging of the soft tissue under minimal invasive surgery is most likely one of the main reasons for these benefits.
- The hypothesis was that the minimal invasive group will have reduced surgical stress, muscular damage, blood loss, pain, length of stay and costs than will the group that have undergone a traditional open spine surgery (TOSS) and that the MISS procedure is safe.

OBJECTIVES

The purpose of this study was to analyze the cost effectiveness of MISS versus TOSS.

METHODS

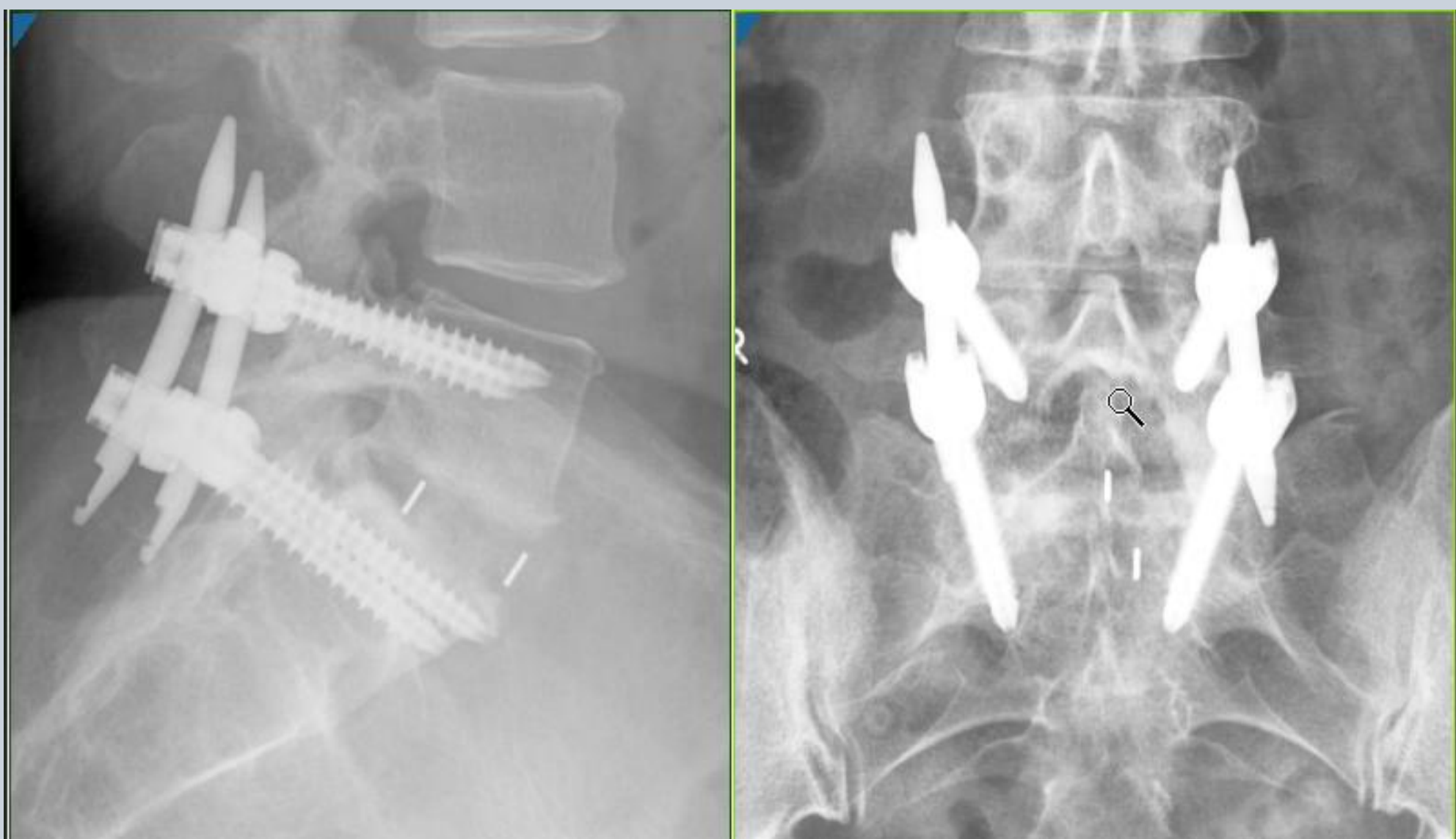
- Retrospective study of costs based on 55 patients' data obtained from DRG system and public health insurance data 2 year before and after surgery.
- Patients from that have undergone 360 degree fusion using either sextant or open traditional exposure both in combination with anterior interbody fusion.
- A total of 39 consecutive patients had MISS and 16 patients had TOSS.
- All patients, 30 women and 26men, 45 (16-62) years old, received a combined anterior and posterior lumbar fusion; 20 at level L5/S1, 8 at L4/L5, 24 at L4/S1 and 3 at level L3/L5. For the anterior interbody fusion a left retroperitoneal approach was used and a peek cage with bone was placed. For the posterior procedure either MISS or TOSS were used. No neurological decompression was performed. Autologous bone was used in all cases and applied in the intervertebral space within a cage. Fluoroscopy was used for both procedures.
- Outcome measures were number of hospital bed days (direct costs), and consumption of health care resources (GP visits, physiotherapists, home care, specialist visits, use of medications etc) (indirect cost) once omitted from the hospital, sick leave payments, and 2 year before and and after surgery, EQ5D and ODI.

RESULTS

- Mean (SD) total costs for MISS was 27.000 (6.900) versus 26.000 (8.500) USD.
- Mean hospital costs for MISS was 23.000 (3.400) versus 22.300 (2.700) USD.
- When adjusted for age and sex mean (SD) total costs for MISS was 25.400 (4.500) versus 26.300 (8.500) USD.
- Mean hospital costs was 21.000 (3.000) versus 22.300 (3.100) USD.
- However the total gain in EQ5D was 1.634 qualy in favor of MISS, or 4.220 USD per qualy for MISS and 5.900 USD per qualy for TOSS.
- The mean increase in ODI at 2 year follow-up was 18 for MISS and 13 for TOSS.

CONCLUSIONS

- There were no difference in costs between MISS and TOSS in lumbar spinal fusion. When adjusted for age and sex a tendency in favor of MISS were found.



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